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### (57) Abstract

Systems and methods treat plasma carrying contaminants and leukocytes that are capable of entraining contaminants. The systems and methods separate leukocytes from the plasma by filtration, thereby removing contaminants entrained within leukocytes. The systems and methods also add to the plasma a photoactive material and emit radiation at a selected wavelength into the plasma to activate the photoactive material and thereby eradicate the contaminant that is free of entrainment by leukocytes.

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- (54) Title: LEUKOCYTE REMOVAL METHOD AND LEUKOCYTE REMOVAL FILTER SYSTEM
- 白血球除去方法および白血球除去フイルターシステム (54) 発明の名称

#### (57) Abstract

A method of removing leukocytes from a leukocyte-containing blood preparation which comprises preparing a leukocyte-A method of removing leukocytes from a leukocyte-containing blood preparation which comprises preparing a leukocyte-poor blood preparation by subjecting the leukocyte-containing blood preparation to the first-stage leukocyte removal treatment to remove at least 60 % of the leukocytes contained in said preparation and subjecting the leukocyte-poor blood preparation to the second-stage leukocyte removal treatment by the use of a microfilter element made from nonwoven or woven fabric having a microfilter element fiber diameter of 0.3 to 1.6 μm. A leukocyte removal filter system wherein the first-stage filter element communicates with mean fiber diameter of 0.3 to 1.6 μm. A leukocyte removal filter system wherein the first-stage filter element communicates with the second-stage filter element and is located on the upstream side of the second-stage element in the direction of flow of the leukocyte-containing blood preparation being treated. The above method and system can reduce the content of the leukocytes remaining in the blood preparation to 10-4 or below and also the size of the filter.